

- #### 4. JOB CONDITIONS

- PARTICULAR CARE SHALL BE TAKEN TO IDENTIFY MATERIALS:
- b) STRESSED IN TENSION TRANSVERSE TO THE GRAIN
(RIGID FRAMES, TRUSSES, ETC.)
- IT IS THE INTENT OF THESE PROVISIONS TO ASSIST PRODUCER
IN THE SELECTION OF MATERIALS BEST SUITED FOR THE
INTENDED PURPOSE.

4. SHOP AND FIELD-APPLIED PAINT SHALL BE PROVIDED WHERE DESIGNATED IN THE CONTRACT DRAWINGS, SPECIFIED HEREIN, AND WHERE REQUIRED BY BUILDING CODE. PAINT MATERIALS SHALL BE FULLY COMPATIBLE WITH FIREPROOFING AND OTHER MATERIALS IN CONTACT WITH THE PAINT AND SHALL BE SELECTED FROM THE FOLLOWING:

- c) ALUMINUM PASTE VARNISH SHALL CONSIST OF 2 LBS OF ALUMINUM PASTE PIGMENT (ASTM 992-66, TYPE 2, CLASS B) PER GALLON (240 G PER LITER) OF ALKYL VARNISH (FEDERAL SPECIFICATION TT-V-8, TYPE 1).

- d) OTHER WHERE ACCEPTED

- Figure 1. The effect of the number of iterations on the accuracy of the proposed algorithm. The accuracy of the proposed algorithm increases with the number of iterations. The accuracy of the proposed algorithm is 100% when the number of iterations is 1000.

8. SHIELDING GAS SHALL BE OF A WELDING GRADE HAVING A DOW POINT OF -40°F (-40°C) OR LOWER.
9. STUD SHEAR CONNECTORS AND CONCRETE ANCHOR STUDS: MATERIAL AND EQUIPMENT FOR WELDED STUDS. STUD SHEAR CONNECTORS AND CONCRETE ANCHOR STUDS SHALL CONFORM TO AWS D1.1.

- MARK: NUTS SHALL BEAR THE DH OR ZH SYMBOL AS APPLICABLE.
ALL BOLTS, NUTS AND WASHERS SHALL BE COLD FORGED; BOLTS
AND NUTS SHALL HAVE ROLLED THREADS. NEITHER HOT FORGED
BOLTS OR NUTS NOR CUT THREADS MAY BE USED IN THE WORK.
- a) IN ADDITION TO THE MANDATORY TESTING PROVIDED IN
THE ASTM SPECIFICATION, PROOF LOAD TESTING (F606),
CHEMICAL ANALYSIS (A751) AND CERTIFICATION SHALL BE

- i) PROOF LOAD TESTING SHALL BE CONDUCTED ON FULL-SIZE BOLTS AND COMPONENTS NOT ON MACHINED TEST SPECIMENS.
- ii) PROOF LOAD TESTING SHALL BE ACCOMPLISHED USING METHOD I (LENGTH MEASUREMENT) OF METHOD F606.

- c) ACCEPTED MANUFACTURERS ARE:
- 1) LAKE ERIE SCREW CORP.
 - 2) NUCOR FASTENER
 - 3) OTHER WHERE ACCEPTED.
- d) DOUBLE NUTS SHALL BE USED FOR ALL FASTENERS DESIGNATED AS FINGER TIGHT.

- f) BEVELED WASHERS SHALL BE SQUARE, SMOOTH, AND SHALL BE SLOPED TO PROVIDE CONTACT SURFACES IN FULL BEARING. PROVIDE FOR ALL SLOPES OF 1:20 AND LARGER.
- g) THE DIAMETER OF HOLES IN SPECIAL, BEVELED AND SQUARE WASHERS SHALL NOT EXCEED 1/16" (1600 MM) WORK FROM THE TOP SURFACE.

- a) DIRECT-TENSION INDICATING WASHERS SHALL BE OF DOMESTIC MANUFACTURE, CONTAINING ONLY DOMESTICALLY PRODUCED RAW MATERIALS, CONFORMING TO ASTM F959. ACCEPTED MANUFACTURERS ARE J & H TURNER, INC., BETH-PAST, OR OTHER ACCEPTED BY ENGINEER. PROVIDE EPOXY COAT, GALVANIZED (ASTM B695, CLASS 50) WASHERS, NO. 2 SURFACES.

12. DEFORMED ANCHOR BARS SHALL BE ASTM A496 DEFORMED BARS PREPARED FOR STUD WELDING AS MANUFACTURED BY ERICO JONES, OR BY NELSON STUD DIVISION OF TRM, OR OTHER

- a) WEDGE-TYPE: MOLLY PARABOLT BY MOLLY FASTENER,
WEDGE ANCHORS BY ITW RANSET/RED HEAD, HKS NIXIE BOLT
ST MILT, RAIL STUD BY THE RAIL COMPANY, OR OTHER

- c) GALVANIZING SHALL CONFORM TO ASTM B695, GRADE 50 CR TO ASTM B633.
- d) STAINLESS STEEL FOR STUDS AND WASHERS SHALL CONFORM TO ASTM A304 OR A304-316. ASTM A304-316.

- INCH (20 MM) DIAMETER OR LARGER.

- (ii) TWO HEAVY HEX NUTS AS SPECIFIED FOR ASTM A325.
 - (iii) 3 X 3 X 1/2 (75X75X12 MM). FY 50 (345 MPA)
PLATE WASHERS.
- THREAD LOCKING COMPOUND SHALL BE LOC-TITE 242 OR DRI-LOC 200, AS APPROPRIATE, BY LOC-TITE CORPORATION. PRO-LOCK

- a) FOR PEDESTRIAN LOADING PROVIDE GRIP STRUT, GALVANIZED, PROPORTIONED TO CARRY SAFELY A LIVE LOAD OF NOT LESS THAN 100 PSF (5 KPA).

- GAS CUTTING: GAS CUTTING, INCLUDING MISCELLANEOUS CUTS, COPIES, CUTS FOR WELD ACCESS AND THE LIKE, SHALL PROVIDE SMOOTH, UNIFORM, MORGANLIKE SURFACES AND SHALL ACHIEVE A 1000 MICRON SURFACE ROUGHNESS OR BETTER AS DEFINED BY ANSI B46.1. EXCEPT WHERE ACCEPTED, GAS CUTTING SHALL BE MACHINE GUIDED: CUTTING BY HAND-GUIDED TOOLS WILL

- INSPECTION WHERE AISC-360 "CURING" JOBS ARE USED, AND WHERE REQUIRED BY AISC SPECIFICATION, CONTRACTOR SHALL PROVIDE 100% INSPECTION BY DYE-PENETRANT OR BY MAGNETIC PARTICLE.
- a) GALVANIZED MEMBERS: GAS-CUT SURFACES AT RE-ENTRANT CORNERS SHALL BE GRIND TO BRIGHT METAL AND TESTED BY DYE-PENETRANT OR MAGNETIC PARTICLE TESTING PRIOR TO PAINTING.

- DEFECTIVE MATERIALS SHALL NOT BE USED IN THE WORK.
STRAIGHTENING BY THE USE OF PROPERLY CONTROLLED HEAT
WILL BE PERMISSIBLE, IF DONE BY PERSONNEL SKILLED IN HEAT
STRAIGHTENING, USING EQUIPMENT AND TECHNIQUES IN ACCORD
WITH WRITTEN PROCEDURE DOCUMENTS AND APPLICABLE DETAIL
SKETCHES PREPARED BY THE FABRICATOR AND ACCEPTED BY
ENGINEER.

- WELDING MATERIALS AND PROCESSES SHALL BE SELECTED FROM THOSE NOTED HEREIN AND SHALL CONFORM TO ACCEPTED WELDING PROCEDURE SPECIFICATIONS. WELDING MATERIALS SHALL BE FRESH AND NEW. WELDING ELECTRODES OR FLUX CONTAMINATED BY DELETERIOUS SUBSTANCES OR MOISTURE SHALL NOT BE USED

- MAKING TACK WELDS AS REQUIRED FOR STRUCTURAL WELDS, INCLUDING PROVISION OF PREHEAT AND POSTHEAT APPROPRIATE TO THE BASE METALS JOINED. TACK WELDS WHICH CRACK SHALL BE CUT OR GROUND AND DAMAGED BASE METAL REPAIRED. REMOVE AND GRIND SMOOTH TACK WELDS NOT INCORPORATED INTO PERMANENT STRUCTURAL WELDS.
- ARC STRIKES: STRAY ARCING BETWEEN ELECTRODES OR OTHER MOVING OF THE ELECTRODE OR ARC ON THE WORK SURFACE.

- CONFORM TO APPLICABLE PROVISIONS OF THE AISC SPECIFICATION AND SPECIFICATIONS FOR STRUCTURAL JOINTS USING A572 OR A575 BOLTS EXCEPT THAT ALL BOLTING PROVISIONS SET FORTH HEREIN SHALL APPLY TO HIGH-STRENGTH SHOP BOLTING.
- DRAINAGE HOLES: PROVIDE HOLLOW TUBULAR, BOX AND OTHER MEMBERS WITH EFFECTIVE DRAINAGE.

- OPPOSITE END TO PERMIT PRESSURE RELIEF DURING THE HOT DIP PROCESS. WHERE BOTH ENDS ARE SEALED, WELD ONE END PLATE ON THE TUBE AFTER THE GALVANIZING PROCESS.

12. BOLT HOLES: DRILL ON SURFACE OF THE METAL. 1/16 INCH (1500 µM) UNLESS OVERSIZE OR SLT THE CONTRACT DRAWINGS MAKE OR ENLARGE HOLES AND REAM MATERIAL WHEN

- SHALL CONFORM TO AWS
BY U7, PARTIAL AND CO
CONFORM TO AWS D1.1.
PENETRATION SHALL BE
POSSESSING SUCH DEFEC
OR REJECTION CRITERIA
DISCONTINUITIES BEFORE
TEARING AFTER WELDING

14. BRITTLE FRACTURE: COULD BE PREVENTED BY PROVIDING WELD ACCORDING TO DETAILS SHOWN IN PROVISIONS OF AN APPROPRIATE SPECIFICATION AND BY REMOVING ALL CRACKS CONTAINED HEREIN. FREE WELD METAL.

- c) WELDS, INCLUDING COMPLETED IN A S

- WELDING OF BOTH
BOSOM OF A WIDE
- f) PROVIDE AND THEN
ALL LOCATIONS WHO
OF WELD MAY CREA
- g) PARTICULAR CARE

- ii) THE VALUES OF THE ELECTRODES SHOULD BE THOROUGHLY WELDED TO THE SUFFICIENT RATE AND WITH

- iv) WELDING AT AN
(0°C) SHALL NOT
ACCEPTANCE.
- h) TAKE SPECIAL CARE
OTHER CUTS SO AS
REMARKS AND COMMENTS

- | | | |
|-------------|---------------------------------------|--|
| ≤ 0.38 | PAKKEAT
$\geq 125^{\circ}\text{F}$ | |
| ≤ 0.40 | | |
| ≤ 0.42 | | |

- NOTE: 125°F = 52°C, 350°F = 177°C
15. WELD INSPECTION: CONFIRM THAT THE WELDS MEET THE REQUIREMENTS OF THE WELDING SPECIFICATION.

- MADE SMOOTH PRIOR TO V
AND PRIOR TO SHIPPING S
TABS FOR FIELD WELDS S
WHERE REQUIRED OR DIREC
17. CLEAN, PAINT AND GALVAN
DO NOT PAINT STEEL EXCE
HEREIN OR IN THE CONTRA